

## Appendices

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## Appendix A: Glossary/Acronyms

<b>AASHTO</b>	American Association of State Highway & Transportation Officials
<b>Accessibility</b>	The extent to which facilities are barrier free and useable by persons with disabilities, including wheelchair users.
<b>Advanced Public Transportation Systems (APTS)</b>	Intelligent Vehicle Highway Systems (IVHS) technology that is designed to improve transit services through advanced vehicle operations, communications, customer service, and market development.
<b>American Public Transit Association (APTA)</b>	The national, nonprofit trade association representing the public transit industry. APTA members include more than 400 public transit systems, as well as state and local departments of transportation and planning agencies, manufacturers and suppliers of transit equipment, consultants, contractors and universities.
<b>Americans with Disabilities Act of 1990 (ADA)</b>	A civil rights law passed by Congress in 1990 that makes it illegal to discriminate against people with disabilities in employment, services provided by state and local governments, public and private transportation, public accommodations, and telecommunications.
<b>Apportionment</b>	A federal budgetary term that refers to a statutorily prescribed division or assignment of funds. It is based on prescribed formulas in the law and consists of dividing authorized obligation authority for a specific program among transit systems.
<b>Appropriation</b>	A federal budgetary term that refers to an act of Congress that permits federal agencies to incur obligations and make payments out of the Treasury for specified purposes. An appropriation act is the most common means of providing budget authority, but in some cases the authorization legislation itself provides the budget authority.

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## Appendix A: Glossary/Acronyms, Continued

<b>Authorization</b>	Basic, substantive legislation which establishes or continues the legal operation of a federal program or agency, either indefinitely or for a specific period of time, or which sanctions a particular type of obligation or expenditure within a program. An authorization may set appropriation limits. See <i>Intermodal Surface Transportation Efficiency Act of 1991</i> .
<b>Automatic Fare Collection System (AFC)</b>	A system of controls and equipment that automatically admits passengers on insertion of the correct fare in coins, tokens, tickets or farecards; it may include special equipment for transporting and counting revenues.
<b>Automatic Vehicle Location (AVL) System</b>	Technology that tracks the current location of fleet vehicles to assist in dispatching, maintaining schedules, answering specific customer inquiries, etc.
<b>AVCSS</b>	Advanced Vehicle Control and Safety Systems
<b>Base Fare</b>	The price charged to one adult for one transit ride, excluding transfer charges, zone charges, express service charges, peak period surcharges and reduced fares.
<b>Base Period</b>	The period between the morning and evening peak periods when transit service is generally scheduled on a constant interval. Also known as “off-peak period.”
<b>Budget Authority</b>	A federal budgetary term that refers to legal authority given by Congress to federal agencies to make funds available for obligation or expenditure.

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## Appendix A: Glossary/Acronyms, Continued

<b>Bus (Motorbus)</b>	A rubber-tired, self-propelled, manually steered vehicle with fuel supply carried on board the vehicle. Types include advanced design, articulated, charter, circulator, double deck, express, feeder, intercity, medium-size, new look, sightseeing, small, standard-size, subscription, suburban, transit, and van.
<b>Bus Discretionary Capital</b>	Federal funding granted under Section 3 of the Federal Transit Act (formerly known as the Urban Mass Transportation Act). These discretionary funds are used for bus-related construction projects or to replace, rehabilitate, or purchase buses.
<b>Bus, Advanced Design</b>	A bus introduced in 1977 that incorporates new styling and design features compared to previous buses.
<b>Bus, Feeder</b>	A bus service that picks up and delivers passengers to a rail rapid transit station or express bus stop or terminal.
<b>Bus, Small</b>	A bus 28 feet or less in length.
<b>Bus, Van</b>	A 20-foot long or shorter vehicle, usually with an automotive-type engine and limited seating normally entered directly through side or rear doors rather than from a central aisle, that is used for demand response, vanpool, and lightly patronized motorbus service.
<b>Capital Costs</b>	Costs of long-term assets of a public transit system, such as property, buildings, vehicles, etc.
<b>Central Business District (CBD)</b>	The downtown retail trade and commercial area of a city or an area of very high land valuation, traffic flow, and concentration of retail business offices, theaters, hotels, and services.

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## Appendix A: Glossary/Acronyms, Continued

<b>Congestion Mitigation and Air Quality (CMAQ)</b>	Federal funds available for either transit or highway projects that contribute significantly to reducing automobile emissions which cause air pollution.
<b>Contract Authority</b>	A federal budgetary term that refers to a form of budget authority permitting obligations to be incurred in advance of appropriations. Advance obligations, however, have been limited by the appropriations committees with obligation limitations.
<b>Corridor</b>	A broad geographical band that follows a general directional flow connecting major sources of trips that may contain a number of streets, highways, and transit route alignments.
<b>CVO</b>	Commercial Vehicle Operations
<b>Dead Reckoning</b>	An AVL technique for locating vehicles by a digitally compensated solid-state compass and wheel sensors installed in each vehicle. These are used to measure heading (direction) and distance to “dead reckon” a new position from a previous position.
<b>Dedicated Funding Source</b>	A source of monies, which by law, is available for use only to support a specific purpose, and cannot be diverted to other uses.
<b>Demand Response</b>	Non-fixed-route service utilizing vans or buses with passengers boarding and alighting at pre-arranged times at any location within the system’s service area. Also called “Dial-a-Ride.”

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## Appendix A: Glossary/Acronyms, Continued

<b>Department of Transportation (DOT)</b>	The cabinet level Department of the federal government that is responsible for administration of federal transportation programs, including public transportation, highways, railroads, air transportation, shipping, and the Coast Guard. Each state also has a department of transportation.
<b>Disadvantaged Business Enterprise (DBE)</b>	A business owned and operated by one or more socially and economically disadvantaged individuals. Socially and economically disadvantaged individuals include African Americans, Hispanic Americans, Native Americans, Asian Pacific Americans or Asian Indian Americans and any other minorities or individuals found to be disadvantaged by the Small Business Administration (SBA) under Section 8 (a) of the Small Business Act.
<b>Discretionary Spending</b>	A federal budgetary term that refers to any funds whose distribution is not automatic. Discretionary spending encompasses programs controlled by annual appropriations bills and is subject to the constraints imposed by the discretionary spending limits set in the balanced budget law.
<b>Downtime</b>	A period during which a vehicle is inoperative because of repairs or maintenance.
<b>Downtown People Mover (DPM)</b>	A type of automated guideway transit vehicle operating on a loop or shuttle route within the Central Business District (CBD) of a city.
<b>Environmental Impact Statement (EIS)</b>	A comprehensive study of likely environmental impacts resulting from major federally-assisted projects; statements are required by the National Environmental Policy Act (NEPA).
<b>Exclusive Right-of-Way</b>	A highway or other facility that can only be used by buses or other transit vehicles.

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## Appendix A: Glossary/Acronyms, Continued

<b>Fare Box Recovery Ratio</b>	Measure of the proportion of operating expenses covered by passenger fares; found by dividing fare box revenue by total operating expenses for each mode and/or systemwide.
<b>Fare Box Revenue</b>	Value of cash, tickets, tokens, and pass receipts given by passengers as payment for rides; excludes charter revenue.
<b>Fare Elasticity</b>	The extent to which ridership responds to fare increases or decreases.
<b>Fare Structure</b>	The system set up to determine how much is to be paid by various passengers using a transit vehicle at any given time.
<b>Federal Transit Administration (FTA)</b>	Formerly known as the Urban Mass Transportation Administration (UMTA); FTA is the agency of the U.S. Department of Transportation which administers the federal program of financial assistance to public transit.
<b>Fixed Route</b>	Service provided on a repetitive, fixed-schedule basis along a specific route with vehicles stopping to pick up and deliver passengers to specific locations; each fixed-route trip serves the same origins and destinations, unlike demand responsive and taxicabs.
<b>Flexible Funds</b>	Those federal funds can be used for highway, transit, or other transportation projects as decided by regional Metropolitan Planning Organizations (MPOs) and state governments. Examples of such funds are the Surface Transportation Program (STP) and the Congestion Mitigation and Air Quality (CMAQ) fund.
<b>Formula Funds</b>	Funds distributed or apportioned to qualifying recipients on the basis of formulas described in law; e.g., funds in the Section 18 program for Small Urban and Rural Transit Assistance, which are distributed to each state based on the state's percentage of national rural population.

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## Appendix A: Glossary/Acronyms, Continued

<b>Global Positioning System (GPS)</b>	Numerous satellites orbit 18,000 kilometers above the earth transmitting signals. From these signals, AVL provides the technology to calculate the location of the vehicles, which it transmits back to the monitoring station via the satellite. A vehicle reads the signals from the few satellites in its range and transmits the location to dispatch.
<b>Grievance Arbitration</b>	The process of resolving a labor dispute involving the application or interpretation of a collective bargaining agreement, by asking an impartial third party to make a decision after both labor and management have presented their cases.
<b>Headway</b>	Time interval between vehicles moving in the same direction on a particular route.
<b>High Occupancy Vehicle (HOV)</b>	Vehicles that can carry two or more persons. Examples of high occupancy vehicles are a bus, vanpool, and carpool. These vehicles sometimes have exclusive traffic lanes called "HOV lanes," "busways," "transitways," or "commuter lanes."
<b>Highway Trust Fund</b>	The federal trust fund established by the Highway Revenue Act of 1956; this fund has two accounts -- the Highway Account and the Mass Transit Account. Trust fund revenues are derived from federal highway-user taxes and fees, such as motor fuel taxes. Trust fund uses and expenditures are determined by law.
<b>Intelligent Vehicle Highway Systems (IVHS)</b>	Automated systems of highway transportation designed to improve traffic monitoring and management. IVHS includes Advanced Public Transportation Systems (APTS), Automatic Vehicle Location System (AVLS), and "smart vehicles" which assist drivers with planning, perception, analysis and decision-making. See also <i>Intelligent Vehicle Highway Society of America (IVHS America)</i> .

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## Appendix A: Glossary/Acronyms, Continued

<b>Intelligent Transportation Infrastructure</b>	<p>Integration of the nine components of Metropolitan Intelligent Transportation Infrastructure (below) is critical to the efficient management of regional transportation systems.</p> <ul style="list-style-type: none"> <li>• transit fleet management</li> <li>• traveler information</li> <li>• electronic fare payment</li> <li>• traffic signal control</li> <li>• freeway management</li> <li>• incident management</li> <li>• electronic toll collection</li> <li>• highway-rail intersection safety systems</li> <li>• emergency response</li> </ul>
<b>Intermodal Surface Transportation Efficiency Act (ISTEA)</b>	<p>The 1991 law that reauthorized the federal surface transportation program for six years. ISTEA heralded a new era in surface transportation because of the emphasis on “intermodalism,” the unprecedented increases in authorized spending for transit, the ability to use some highway funds for transit (and vice versa), and the increased reliance on regional planning agencies to weigh transportation options and make decisions utilizing public participation.</p>
<b>Jitney</b>	<p>Privately-owned, small or medium-sized vehicle usually operated on a fixed route but not on a fixed schedule.</p>
<b>Joint Development</b>	<p>Ventures undertaken by the public and private sectors for development of land around transit stations or stops.</p>
<b>Kiss and Ride</b>	<p>A place where commuters are driven and dropped off at a station to board a public transportation vehicle.</p>

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## Appendix A: Glossary/Acronyms, Continued

<b>Managers of Mobility</b>	Transit systems that expand their role to include services and approaches beyond traditional public transportation, such as ridesharing, high occupancy vehicle programs, public education on transit's benefits and integration of land use, air quality, and transportation decisions. The phrase was developed as part of the industry's Transit 2000 policy effort undertaken in the late 1980s and early 1990s.
<b>Metropolitan Planning Organization (MPO)</b>	The organization designated by local elected officials as being responsible for carrying out the urban transportation and other planning processes for an area.
<b>Modal Split</b>	A term that describes how many people use alternative forms of transportation. Frequently used to describe the percentage of people using private automobiles as opposed to the percentage using public transportation.
<b>Multimodal</b>	Those issues or activities which involve or affect more than one mode of transportation, including transportation connections, choices, cooperation and coordination of various modes. Also known as "intermodal."
<b>National Environmental Policy Act of 1969 (NEPA)</b>	A comprehensive federal law requiring analysis of the environmental impacts of federal actions such as the approval of grants. It also requires preparation of an Environmental Impact Statement (EIS) for every major federal action significantly affecting the quality of the human environment.

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## Appendix A: Glossary/Acronyms, Continued

<b>National Highway System (NHS)</b>	A proposed transportation system consisting of approximately 155,000 miles of highway in order to provide an interconnected system of principal arterial routes serving major population centers, major transportation facilities, major travel destinations, interstate and interregional travel, and meeting national defense requirements. The NHS, defined in the Intermodal Surface Transportation Efficiency Act (ISTEA), is one component of the National Transportation System (NTS).
<b>National Transportation System (NTS)</b>	An intermodal system consisting of all forms of transportation in a unified, interconnected manner to reduce energy consumption and air pollution while promoting economic development and supporting the nation's preeminent position in international commerce. The NTS includes the National Highway System (NHS), public transportation, and access to ports and airports.
<b>NTCIP</b>	National Transportation Communications for ITS Profile
<b>Obligation</b>	A federal budgetary term that refers to a binding agreement that will result in an outlay. It is an agreement by the federal government to pay for goods or services immediately or at some future time when the goods or services are delivered. Also known as a "commitment."
<b>Obligation Limitation</b>	A federal budgetary term that refers to a limit placed in appropriations bills on the amount of federal assistance that may be obligated during a specified time period. It does not affect the scheduled apportionment or allocation of funds; it just controls the rate at which these funds may be used.
<b>Off-Peak Period</b>	Non-rush periods of the day when travel activity is generally lower and less transit service is scheduled. Also called "base period."
<b>Operating Assistance</b>	Financial assistance for transit operating expenses (not capital costs); such aid may originate with federal, local or state governments.

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## Appendix A: Glossary/Acronyms, Continued

<b>Operating Revenue</b>	Receipts derived from or for the operation of transit service, including fare box revenue, revenue from advertising, interest, and charter bus service, and operating assistance from governments.
<b>Outlay</b>	A federal budgetary term that refers to a payment made to meet an obligation; the point at which an actual payment of money is made.
<b>Paratransit</b>	A public transportation service that is more flexible and personalized than conventional fixed route, fixed schedule service. It can be available to the general public and/or to certain groups, such as the elderly.
<b>Park and Ride Lot</b>	Designated parking areas for automobile drivers who then board transit vehicles from these locations.
<b>Passenger Transport (PT)</b>	The weekly newspaper of the transit industry that is published by the American Public Transit Association (APTA).
<b>PCB</b>	Professional Capacity Building
<b>Peak Period</b>	Morning and afternoon time periods when transit riding is heaviest.
<b>Peak/Base Ratio</b>	The number of vehicles operated in passenger service during the peak period divided by the number operated during the base period.
<b>Public Transit System</b>	An organization that provides transportation services owned, operated, or subsidized by any municipality, county, regional authority, state, or other governmental agency, including those operated or managed by a private management firm under contract to the government agency owner.

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## Appendix A: Glossary/Acronyms, Continued

<b>Public Transportation</b>	Transportation by bus, rail, or other conveyance, either publicly or privately owned, which provides to the public general or special service on a regular and continuing basis. Also known as “mass transportation,” “mass transit,” and “transit.”
<b>Rail Modernization</b>	Federal funding granted under Section 3(h) of the Federal Transit Act (formerly known as the Urban Mass Transportation Act). These discretionary funds are distributed by a formula and made available to transit systems for improvements on fixed guideway systems that have been in service for at least seven years. Also known as “fixed guideway modernization.”
<b>Rail, Light</b>	An electric railway with a “light volume” traffic capacity compared to heavy rail. Light rail may use shared or exclusive rights-of-way, high or low platform loading, and multi-car trains or single cars. Also known as “streetcar,” “trolley car,” and “tramway.”
<b>Rail, Commuter</b>	Railroad local and regional passenger train operations between a central city, its suburbs, and/or another central city. It may be either locomotive-hauled or self-propelled, and is characterized by multi-trip tickets, specific station-to-station fares, railroad employment practices and usually only one or two stations in the central business district. Also known as “suburban rail.”
<b>Rapid Transit</b>	Rail or motorbus transit service operating completely separate from all modes of transportation on an exclusive right-of-way.
<b>Ridership</b>	The number of rides taken by people using a public transportation system in a given time period.
<b>Ridesharing</b>	A form of transportation, other than public transit, in which more than one person shares the use of the vehicle, such as a van or car, to make a trip. Also known as “carpooling” or “vanpooling.”

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## Appendix A: Glossary/Acronyms, Continued

<b>Section 16</b>	The section of the Federal Transit Act (formerly known as the Urban Mass Transportation Act of 1964), as amended, that declares the national policy to be that elderly persons and persons with disabilities have the same right as other persons to utilize mass transportation facilities and services and that special efforts shall be made in the planning and design of mass transportation facilities and services so that effective utilization by elderly persons and persons with disabilities is assured.
<b>Section 18</b>	The section of the Federal Transit Act (formerly known as the Urban Mass Transportation Act of 1964), as amended, that authorizes grants to public transit systems outside urbanized areas, based on formulas set out in statute; the funds go initially to the governor of each state.
<b>Section 9</b>	The section of the Federal Transit Act (formerly known as the Urban Mass Transportation Act of 1964), as amended, that authorizes grants to public transportation systems in urbanized areas (population greater than 50,000) for both capital and operating programs based on formulas set out in statute.
<b>Shuttle</b>	A public or private vehicle that travels back and forth over a particular route, especially a short route or one that provides connections between transportation systems, employment centers, etc.
<b>TCIP</b>	Transit Communications Interface Profile
<b>Transfer Center</b>	A fixed location where passengers interchange from one route or vehicle to another.
<b>Transit Pass</b>	A tax-free employee commute benefit in which an employer subsidizes up to \$60 per month for an employee's transit fares or vanpool charges. This benefit also applies to military and government employees.

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## Appendix A: Glossary/Acronyms, Continued

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<b>Transit System</b>	An organization (public or private) providing local or regional multi-occupancy vehicle passenger service. Organizations that provide service under contract to another agency are generally not counted as separate systems.
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<b>Urbanized Area (UA)</b>	A U.S. Bureau of Census-designated area of 50,000 or more inhabitants, consisting of a central city or two adjacent cities plus surrounding densely settled territory, but excluding the rural portion of cities.

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## Appendix B: Transit Internet Sites

WEB INDEX		
Topic	Address	Module
3M ITS INFO System	<a href="http://www.mmm.com/market/trans/its/infosys.html">www.mmm.com/market/trans/its/infosys.html</a>	5
APTA homepage	<a href="http://www.apta.com">www.apta.com</a>	all
Automatic Vehicle Location for Law Enforcement	<a href="http://www.securitymanagement.com/library/000040.html">www.securitymanagement.com/library/000040.html</a>	2
AVL Information Systems, Ltd.	<a href="http://www.avlsystems.com">www.avlsystems.com</a>	2
Community Transportation Association of America	<a href="http://www.ctaa.org">www.ctaa.org</a>	8
Demand-oriented transit	<a href="http://www.init-ka.de/english/products/mobile/bbad_eng.html">www.init-ka.de/english/products/mobile/bbad_eng.html</a>	8
East Bay Paratransit Consortium	<a href="http://www.abag.ca.gov/abag/local_gov/para.html">www.abag.ca.gov/abag/local_gov/para.html</a>	6
Fleet management, APTS	<a href="http://www.fta.dot.gov/fta/library/technology/APTS/t_its.htm">www.fta.dot.gov/fta/library/technology/APTS/t_its.htm</a>	4
Georgia Transportation	<a href="http://www.dot.state.ga.us/homeoffs/planning.www/question.htm">http://www.dot.state.ga.us/homeoffs/planning.www/question.htm</a>	
GIS Software	<a href="http://www.esri.com">www.esri.com</a>	5
GIS Solutions for Public Transit Management	<a href="http://www.esri.com/industries/transport/transit.html">http://www.esri.com/industries/transport/transit.html</a>	5
Global Positioning System	<a href="http://www.utexas.edu/depts/grg/gcraft/notes/gps/gps.html">http://www.utexas.edu/depts/grg/gcraft/notes/gps/gps.html</a>	2

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## Appendix B: Transit Internet Sites, Continued

WEB INDEX		
Topic	Address	Module
Glossary of Transit Terminology	<a href="http://www.apta.com/info/online/glossary.htm">www.apta.com/info/online/glossary.htm</a>	All
GPS World magazine	<a href="http://www.gpsworld.com">www.gpsworld.com</a>	All
Index of transit web sites	<a href="http://www.fta.dot.gov/other">www.fta.dot.gov/other</a>	All
Infosat	<a href="http://www.infosat.com/main.htm">www.infosat.com/main.htm</a>	
Iridium, O'Gara Satellite Systems	<a href="http://www.ogarasat.com/oss/iridium/iridium.htm">www.ogarasat.com/oss/iridium/iridium.htm</a>	4
Iridium Services by Stratos	<a href="http://www.stratos.ca/services/pss/iridium">www.stratos.ca/services/pss/iridium</a>	4
ITE homepage	<a href="http://www.ite.org">www.ite.org</a>	All
ITS America	<a href="http://www.itsa.org">www.itsa.org</a>	1
ITS Glossary	<a href="http://www.siemensauto.com/glossaries/its_glossary.html">www.siemensauto.com/glossaries/its_glossary.html</a>	8
ITS Online	<a href="http://www.nawgits.com/icdn.html">www.nawgits.com/icdn.html</a>	All
ITS standards	<a href="http://www.itsa.org/standards">www.itsa.org/standards</a>	9
Low earth orbit satellites	<a href="http://www.leoone.com/define.html">www.leoone.com/define.html</a>	4
Low earth orbit satellites	<a href="http://www.ee.surrey.ac.uk/ssc">www.ee.surrey.ac.uk/ssc</a>	4
Matex Treadle Switches	<a href="http://www.londonmat.com">www.londonmat.com</a>	5
METRO Future Bus	<a href="http://www.hou-metro.harris.tx.us/FUTUREBUS.htm">www.hou-metro.harris.tx.us/FUTUREBUS.htm</a>	5
National ITS architecture	<a href="http://www.itsa.org/public/archdocs/national.html">www.itsa.org/public/archdocs/national.html</a>	9
Nationwide real-time traveler information service	<a href="http://www.etak.com">www.etak.com</a>	3
NEMA	<a href="http://www.nema.org">www.nema.org</a>	All
Overview	<a href="http://www.fta.dot.gov/library/technology/APTS/t_its.htm">www.fta.dot.gov/library/technology/APTS/t_its.htm</a>	All
Pittsburgh Transportation	<a href="http://trfn.clpgh.org/trcil/access-to-pgh-guide/transportation.html">trfn.clpgh.org/trcil/access-to-pgh-guide/transportation.html</a>	6

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## Appendix B: Transit Internet Sites, Continued

WEB INDEX		
Topic	Address	Module
Public transit in rural America	<a href="http://www.fta.dot.gov/ntl/index.html">www.fta.dot.gov/ntl/index.html</a>	8
Puget Sound's Model Deployment Initiative	<a href="http://www.pnl.gov/mdi/abbr.htm">www.pnl.gov/mdi/abbr.htm</a>	
Raytheon Systems Company	<a href="http://www.raytheon.com/rsc">www.raytheon.com/rsc</a>	5
Rural and specialized passenger transportation	<a href="http://www.bts.gov/smart/cat/rspt.html">www.bts.gov/smart/cat/rspt.html</a>	8
Rural transit traveler information web page	<a href="http://www.blacksburg.va.us/transit/welcome.html">www.blacksburg.va.us/transit/welcome.html</a>	8
Rutgers NTI Course listings and descriptions	<a href="http://policy.rutgers.edu/nti/">policy.rutgers.edu/nti/</a>	All
Santa Clara Valley Transportation Authority	<a href="http://www.vta.org">www.vta.org</a>	6
Small urban/rural definitions	<a href="http://www.census.gov/population/www/censusdata/ur-def.html">www.census.gov/population/www/censusdata/ur-def.html</a>	8
Community Transportation Association	<a href="http://www.ctaa.org">www.ctaa.org</a>	8
Spread spectrum	<a href="http://www.ntia.doc.gov/openness/">www.ntia.doc.gov/openness/</a>	4
Transit management, ATIS, freeway & incident management, traffic signal control, public safety systems	<a href="http://www.trw.com/systems_it">www.trw.com/systems_it</a>	5
Trimble	<a href="http://www.trimble.com">www.trimble.com</a>	3
Wardrop Engineering, Inc.	<a href="http://www.wardrop.com/wdeng/wdeng.html">www.wardrop.com/wdeng/wdeng.html</a>	
Winston-Salem Transportation Authority	<a href="http://www4.ncsu.edu/~mnsurask/wsta.html">www4.ncsu.edu/~mnsurask/wsta.html</a>	6
Wireless data networking	<a href="http://www.ddx.com/">www.ddx.com/</a>	4



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## Appendix D: Related Seminar Descriptions

Transit Management Training Course	Title	ITS Professional Capacity Building		NTI course
		Technical Seminars	Short Courses	
<b>Module 1: Introduction</b>	Intelligent Transportation Systems Awareness Seminar	x		
	ITS/CVO Awareness Seminar	x		
	ITS in Transit	x		
	Advanced Transportation Management Technology Workshop		x	
	Intelligent Transportation Systems for Transit: Solving Real Problems			x
	NTI Fellows Program			x
<b>Module 2: Automatic Vehicle Location Systems</b>	Geographic Information Systems: Transit Applications			x
<b>Module 3: Automated Transit Information</b>	Planning the Integration of Transit and Traffic ITS Applications			x
	Reinventing Transit: Using Information Technologies to Reinvent Transit Services			x
	Improving Transit System Performance Using Information-Based Strategies			x
<b>Module 4: Advanced Telecommunications</b>	ITS Telecommunications Overview	x		
	Shared Resources for Telecommunications	x		
	ITS Telecommunications Analysis	x		
<b>Module 5: Transit Operations Software</b>	Geographic Information Systems: Transit Applications			x
	Improving Transit System Performance Using Information-Based Strategies			x
	Reinventing Transit: Using Information Technologies to Reinvent Transit Services			x

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## Appendix D: Related Seminar Descriptions, Continued

Transit Management Training Course	Title	ITS Professional Capacity Building		NTI course
		Technical Seminars	Short Courses	
<b>Module 6: Paratransit</b>	<i>See also Module 5</i>			
	Comprehensive ADA Paratransit Eligibility Determinations			X
	Efficiencies in Paratransit Scheduling and Dispatching			X
	Managing and Planning Paratransit Operations			X
<b>Module 7: Electronic Fare Payment</b>	ITS for Transit ( <i>contains an in-depth case study on regional fare integration</i> )	X		
<b>Module 8: Small Urban/ Rural</b>	<i>See also Module 6 and Module 5 listings.</i>			X
	Reinventing Transit: Using Information Technologies to Reinvent Transit Services			X
	Market Segmentation for Transit			X
<b>Module 9: ITS Project Deployment</b>	ITS and the Transportation Planning Process	X		
	ITS Public/Private Partnerships	X		
	Innovative Finance Strategies for Deploying ITS	X		
	ITS Systems Engineering/Architecture	X		
	The National ITS Architecture: An Introduction for FTA Senior Staff	X		
	Using the National ITS Architecture for Deployment		X	
	Procuring New Technologies for Transit			X
	Market Segmentation for Transit			X
	An Effective Change Order Process			X
	Contract Administration			X
	Cost and Price Analysis & Contract Negotiations			X



Transit Management Training Course	Title	ITS Professional Capacity Building		NTI course
		Technical Seminars	Short Courses	
<b>Module 9: ITS Project Deployment</b>	Financial Programming for Metropolitan Planning Organizations (MPO's)			x
	Forecasting Travel Demand for Transit and HOV			x
	Introduction to Metropolitan Transportation Planning			x
	Management of Transit Construction Projects			x
	Noise and Vibration Impact Assessment			x
	Orientation to Third-Party Contracting			x
	Orientation to Transit Procurement			x
	Planning the Integration of Transit and Traffic ITS Applications			x
	Public Involvement in Transportation Decision-making			x
	Statewide and Metropolitan Transportation Programming			x
	Third-Party Contracting: An Executive Overview			x
	Training Program for Major Investment Studies (MIS)			x

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## Appendix D: Related Seminar Descriptions, Continued

### Intelligent Transportation Systems Awareness Seminar

This seminar provides a general understanding of ITS infrastructure components. Institutional and technical elements in deploying ITS infrastructure are presented, including planning, design, architecture, standards, procurement, installation and construction, operation and maintenance, and funding. The seminar presents benefit cost issues related to ITS/ITS infrastructure implementation via examples from systems deployed around the country.

Given as FHWA course # 13380.

### ITS and the Transportation Planning Process

This seminar acquaints participants with information needed to advance ITS strategies to implementation within the context of typical transportation planning processes. The seminar covers topics such as transportation plans and programs, system performance criteria, benefit cost analysis, financial planning, and working with the private sector. Case study information on the development of ITS in specific areas of the U.S. is included.

Given as FHWA course #13383.

### ITS Telecommunications Overview

This overview seminar familiarizes participants with the current issues surrounding the deployment and use of telecommunications infrastructure. It introduces participants to the fundamentals of wireline and wireless telecommunications systems. The course concludes with a brief discussion of the telecommunication technology acquisition process.

Given as FHWA course # 13386.

### Shared Resources for Telecommunications

This workshop targets issues and key decisions that senior transportation officials and project managers must address when considering shared resource arrangements, such as applicability, compensation, and structure. The agency must answer questions such as the following:

- Applicability - Do state and federal laws allow shared resource arrangements in its particular circumstance? Do they restrict the form of the arrangement?
- Compensation - What kind of compensation is best for the state? What kind of compensation may the state legally receive?
- Structure - How many partners does the agency want? How should it choose a private partner? Who will direct the project?

Given as FHWA course #13392.

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## Appendix D: Related Seminar Descriptions, Continued

### ITS Telecommunications Analysis

The State of Maryland recently conducted an analysis of its telecommunications requirements, options, and cost for the Chesapeake Highway Advisories (for) Routing Traffic (CHART) ITS project. They made a number of startling discoveries:

- A hybrid network utilizing both owned fiber and leased commercial services saved \$23.6M when compared to a fully owned fiber optic network.
- Compressed digital video produced pictures of sufficient quality for all the functions currently defined for the system.
- The costs of telecommunications could not be projected based upon published tariffs because increasing competition and new technology are producing ever increasing savings.

These and other results of the analysis for Maryland's CHART project as well as a detailed description of the methodology employed in the study are presented. Given as FHWA course #13393.

### ITS Public/Private Partnerships

This overview seminar presents public/private partnership models for cost sharing, shared deployment, and franchising. It also identifies institutional impediments, discusses risk sharing in ITS partnering, and presents successful case studies. Given as FHWA course #13381.

### ITS in Transit

This seminar addresses Advanced Public Transportation Systems (APTS) - the public transportation component of ITS. It serves to make the transit community aware of ITS/APTS, to make the highway community aware of the APTS role in ITS, and to describe the advantages of integrated Transit and highway operations. Given as FHWA course #13387.

### ITS Systems Engineering/Architecture

This seminar explains what systems engineering is and how the National ITS Architecture is to be used for Intelligent Transportation Systems deployment. Participants will understand the basic concepts and benefits of using systems engineering and the National ITS Architecture to guide implementation of ITS and ITS Infrastructure. Given as FHWA course #13384.

### Innovative Finance Strategies for Deploying ITS

This overview seminar is being developed to provide a basic understanding of ITS project delivery strategies including alternative design-build and private sector construction and operation. It will also provide a basic understanding of alternative ITS financing strategies, including federal-aid funding, state and local funding, and innovative financing. Given as FHWA course #13382.

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## Appendix D: Related Seminar Descriptions, Continued

### ITS/CVO Awareness Seminar

This seminar is designed to be given as part of the ITS/CVO “Technology Truck” Tour. This course gives attendees a better understanding of the ITS/CVO Program while imparting information on existing technologies and benefits in an interactive environment. Participants attend briefings to examine ITS/CVO projects and explore technologies demonstrated in an interactive classroom environment, or by visiting the indoor demonstration areas such as a full-scale mock-up of a truck cab, outfitted with state-of-the-art technology. The “Technology Truck” moves from event to event, so its schedule should be consulted at web-site: [www.avalon-ais.com/itscvo/](http://www.avalon-ais.com/itscvo/). Given as FHWA course # 13396.

### Deploying Integrated Intelligent Transportation Systems

The objective of this two and a half day training course is to support integrated intelligent transportation system infrastructure deployment with clear consideration of the National ITS Architecture. The regional context in which the public components of ITS infrastructure will be implemented and integrated is emphasized. The seminar combines the technical and institutional components of integrated ITS infrastructure so that a clear understanding of the importance of each is understood and placed in context with the regional decisions that must be made by state and local agencies. In this manner, transportation program managers obtain a sufficient understanding of the technical and institutional implications that accompany deploying integrated infrastructure within the framework of the National ITS Architecture. Given as FHWA course #13378.

### Using the National ITS Architecture for Deployment

The objective of this three-day, no cost, short course is to demonstrate how to apply tools and methodologies developed by the National Architecture Teams for the U.S.DOT. This course is presented by the U.S. ITS Joint Program Office. Topics covered include:

- An architecture as part of the systems engineering process
- Logical and physical architectures
- Theory of operations
- Standards and the Architecture
- How to use the Architecture for local and regional problems
- Demonstration of the Architecture tools
- Hands-on use of data bases and the Internet on PC Pentium computers
- An optional two-day case study follows

Given as FHWA course #13394.

### Transit Management Course

This course expands on the ITS in Transit Technical Seminar to present more details on the integration of highway and transit ITS, on how ITS can be applied to transit, the benefits to transit of applying ITS technologies, and other topics of high interest to the transit industry.

*Continued on next page*



## Appendix D: Related Seminar Descriptions, Continued

### **Advanced Transportation Management Technology Workshop**

This will develop, through use of a workshop and hands-on demonstration, a comprehensive approach consisting of various components of an Advanced Transportation Management System. These components include: ramp and freeway mainline control, surveillance and detection, driver information systems, automatic vehicle identification, incident management, electronic toll collection, etc. FHWA formed public/private partnerships with industry to demonstrate and display available Transportation Management Technologies in a cooperative effort. Hardware and software products will be showcased in a highly-visible mobile workshop in the form of a large customized tractor-trailer combination with expandable sides. It will consist of a 2-to-3 day presentation and hands-on demonstration on the various advanced corridor management technologies. The workshop will be coordinated with the hands-on portion of the demonstration project where each participant will have the opportunity to use a terminal to simulate the corridor management techniques/technologies as they are being presented in the workshop. The simulation will emulate real operations of a system and will enable the user to execute simulated commands and algorithms in a controlled environment.

### **Intelligent Transportation Systems for Transit: Solving Real Problems**

The purpose of this course is to provide transit agencies with an overview of Intelligent Transportation Systems (ITS) technologies that are available to improve transit operations, planning, scheduling, fare collection, and customer service. Providing transit agencies with this information is crucial as agencies search for cost-effective and innovative ways to provide better service more efficiently. Further, agencies armed with this knowledge can successfully determine whether deployment of new technologies is needed and can pursue the procurement and deployment of these technologies. This course is a natural precursor to NTI's course in Procuring New Technologies for Transit. This course provides a framework to help your agency handle the inherent institutional and organizational issues that come with considering technology development.

### **Procuring New Technologies for Transit**

This two-day intensive course on successful procurement and implementation of new technologies for transit introduces the nine-box systems approach diagram while reviewing such steps as problem recognition, definition, needs analysis, planning and design, specifications development, procurement methods and procedures, contract preparation, negotiation and award, training, installation, testing, deployment/full operation, project evaluation, system maintenance, and upgrading. Small group, case-based examples are reviewed and related exercises performed. Given by the National Transit Institute. <http://policy.rutgers.edu/nti/>

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## Appendix D: Related Seminar Descriptions, Continued

### **Geographic Information Systems: Transit Applications**

This course is designed for technical staff and managers who will select software, coordinate data collection with other agencies, help to evolve current Geographic Information Systems (GIS) programs to the next level, and need a keen understanding of the implications of their procurement decisions. Although previous experience with computers or GIS is helpful, it is not required. Includes hands-on evaluation of ArcInfo, ArcView, and MapInfo. The course also demonstrates Intergraph and TransCad.

### **Improving Transit System Performance: Using Information-Based Strategies**

Transit systems serve an increasingly varied range of customer needs and often measure their performance against guidelines and standards. This variety of needs is complicated to assess and challenging to address. The increasing quality and quantity of data that is now available through Information Technologies (IT) can be used to improve existing services, identify when innovative new services are needed, enhance productivity, and streamline existing procedures within agencies. In some cases, useful data is readily available from information technology installed for an unrelated purpose. Staff may not be aware of where to find it, how to access it, and how to use it. The course presumes a basic knowledge of Information Technologies (IT) for transit, such as Advanced Public Transportation Systems. The course is designed so that staff with disparate responsibilities within the same agency will recognize common needs and move their agency towards consensus on developing future information technology applications.

### **Reinventing Transit: Using Information Technologies to Reinvent Transit Services**

The purpose of this training course is to transfer the latest knowledge on the possibilities for better coordinating and combining services resulting from rapidly improving Information Technologies (IT). It presupposes some basic knowledge of IT for either transit or paratransit applications. The course is intended to enhance cooperation between professional staff with traditionally separate responsibilities within the same agency in developing more cost-effective and attractive services that transcend their traditional division of responsibilities.

### **Integrating Transit & Traffic ITS Applications**

Planners and transportation system analysts lack operational experience and an understanding of the cross modal applications of the highway and transit components of the intelligent transportation infrastructure. They need to design potential applications to realize the full productivity or capacity improvements that can result from a more integrated and cooperative approach. The purpose of this training course is to support improved agency-to-agency collaborations and partnerships that result in more cost-effective and beneficial information technology systems. This course presumes basic knowledge of Information Technologies (IT) for either transit or highway systems.

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## Appendix D: Related Seminar Descriptions, Continued

### Are You Ready for AVL?

Automatic Vehicle Location (AVL) is a dramatic and innovative tool for managing information, improving communications, and fostering change in operations. With the advent of global positioning systems technology, more transit agencies are embracing AVL. However, implementing AVL involves much more than just learning about GPS technology. Are you ready for this and much more? Where does your organization want to be in the next five to ten years, and what role will AVL play in helping you get there? Dan Overgaard's seminar focuses on getting the right people involved, identifying operational priorities, selecting technologies, anticipating implementation issues, and making it happen. NTI half-day workshop.

### Innovative Uses of Paratransit Technology

First-hand experience with multiple transit and paratransit forms the basis of this workshop, which features "lessons learned" about how to design and implement well integrated advanced systems in transit. Case studies include experiences gathered from:

- Community Transit of Delaware County (PA);
- Suburban Mobility Authority for Regional Transportation (SMART, suburban Detroit);
- Potomac and Rappahannock Transportation Commission; and
- Westchester County (NY) Department of Transportation.

The workshop offers participants the broader vision from a consultant's perspective. It includes comparative discussions of technology applications including automated scheduling and dispatching, automatic vehicle location, mobile data terminals, and automated identification/fare cards. NTI Half-day workshop.

### Analytic Troubleshooting for the Advanced Technology Bus: Train the Trainer

This five-day program is for transit trainers preparing to teach current employees and/or apprentices to troubleshoot electrical systems. Participants tour various Metropolitan Atlanta Transit Authority (MARTA) facilities, receive an overview of MARTA's training program for master bus electricians, and discuss procurement practices with MARTA staff. A Master Bus Electrician can precisely diagnose a bus electrical system failure to the fault within 15 minutes. The program includes a complete curriculum to train entry-level mechanics to the level of Master Bus Electrician, including lab materials, detailed lesson plans, and resource lists.

### NTI Fellows Workshops on Advanced Technologies and Innovative Practices for Transit

NTI Fellows are selected through a national nomination process for a combination of insight and recent, first-hand experience in implementing advanced technologies and innovations. Each has demonstrated an outstanding ability to communicate the lessons learned to their colleagues. NTI offers half-day sessions at no cost to transit agencies and schedules approximately 30 NTI Fellows visits each year.



## Appendix E: Local References by Region

### Local references

This section contains local references that may be of interest to the students.

Region 1: Albany, NY	
Project	For more information...
Telephone ATIS for transit	<ul style="list-style-type: none"> <li>• SmarTraveler: 357-1234</li> </ul>
Web sites of interest	<ul style="list-style-type: none"> <li>• <a href="http://www.mbta.com">www.mbta.com</a> (Boston MBTA)</li> </ul>
Other local projects	

Region 2: NYC	
Project	For more information...
Telephone ATIS for transit	
Web sites of interest	<ul style="list-style-type: none"> <li>• <a href="http://www.mta.nyc.ny.us">www.mta.nyc.ny.us</a></li> <li>• <a href="http://www.ci.nyc.ny.us">www.ci.nyc.ny.us</a></li> </ul>
Other local projects	

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## Appendix E: Local References by Region, Continued

Region 3: Philadelphia	
Project	For more information...
Telephone ATIS for transit	
Web sites of interest	<ul style="list-style-type: none"> <li>• <a href="http://www.septa.com">www.septa.com</a></li> </ul>
Other local projects	

Region 4: Atlanta (Miami)	
Project	For more information...
Telephone ATIS for transit	
Web sites of interest	<ul style="list-style-type: none"> <li>• <a href="http://www.atlanta-traveler.com">www.atlanta-traveler.com</a></li> </ul>
Other local projects	

Region 5: Chicago (Minneapolis)	
Project	For more information...
Telephone ATIS for transit	
Web sites of interest	<ul style="list-style-type: none"> <li>• <a href="http://www.transitchicago.com">www.transitchicago.com</a></li> <li>• <a href="http://www.metrotransit.org">www.metrotransit.org</a></li> </ul>
Other local projects	

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## Appendix E: Local References by Region, Continued

Region 6: Arlington, TX (Houston/San Antonio)	
Project	For more information...
Telephone ATIS for transit	
Web sites of interest	<ul style="list-style-type: none"> <li>• <a href="http://www.hou-metro.harris.tx.us">www.hou-metro.harris.tx.us</a></li> </ul>
Other local projects	<ul style="list-style-type: none"> <li>• Houston Smart Commuter FOT (Houston Metro)</li> <li>• Corpus Christi ADART (this is the future)</li> </ul>

Region 7: Kansas City (St. Louis)	
Project	For more information...
Telephone ATIS for transit	
Web sites of interest	<ul style="list-style-type: none"> <li>• <a href="http://www.bi-state.org">www.bi-state.org</a></li> </ul>
Other local projects	

Region 8: Denver (Salt Lake City)	
Project	For more information...
Telephone ATIS for transit	
Web sites of interest	<ul style="list-style-type: none"> <li>• <a href="http://www.rta-denver.com">www.rta-denver.com</a></li> <li>• <a href="http://www.utabus.com">www.utabus.com</a></li> </ul>
Other local projects	

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## Appendix E: Local References by Region, Continued

Region 9: San Francisco (Southern CA - San Diego/Los Angeles)	
Project	For more information...
Telephone ATIS for transit	<ul style="list-style-type: none"> <li>• Sacramento commuter information: 1-800-COMMUTE</li> </ul>
Web sites of interest	<ul style="list-style-type: none"> <li>• <a href="http://www.transitinfo.org">www.transitinfo.org</a></li> </ul>
Other local projects	

Region 10: Seattle (Portland)	
Project	For more information...
Telephone ATIS for transit	
Web sites of interest	<ul style="list-style-type: none"> <li>• <a href="http://www.wsdot.wa.gov/CPSRTA/">www.wsdot.wa.gov/CPSRTA/</a></li> <li>• <a href="http://www.pnl.gov">www.pnl.gov</a></li> </ul>
Other local projects	



## Appendix F: Transit Examples in Student Guide

**Examples used in materials** The following examples are used in the TM '99 edition.

City	Mod	SG Page	Web site	Type of Example
ACCESS, Pittsburgh, PA	6	15	<a href="http://Trfn.clpgh.org/trcil/access-to-pgh-guide/transportation.html">Trfn.clpgh.org/trcil/access-to-pgh-guide/transportation.html</a>	Paratransit feeder service, GIS
Ann Arbor Transit Authority (AATA)	2	42	<a href="http://www.theride.org/home.html">www.theride.org/home.html</a>	AVL + signal control
	4	27		800 MHz Trunked system, AVL/ differential GPS <i>slide</i>
Bay Area Rapid Transit (BART)	3	34	<a href="http://www.transitinfo.org">www.transitinfo.org</a>	ATIS In-terminal talking signs <i>slide</i>
	7	42		Fare systems: cashless purchase of media
Beaver County Transit Authority (BCAT)	8	17, 32	<a href="http://www.pavisnet.com/beaver">www.pavisnet.com/beaver</a>	Small urban: mobility manager, AVL/MDTs, ATIS
Cape Cod Regional Transit Authority	8	14, 15,	<a href="http://www.allcapecod.com/ccrta">www.allcapecod.com/ccrta</a>	Rural tourist information system, AVL
Central Puget Sound	7	37	<a href="http://www.soundtransit.org">www.soundtransit.org</a>	Fare systems Integrated payment, cost savings
Chelan/ Douglas County	4	29	<a href="http://www.linktransit.com">www.linktransit.com</a>	Shared spectrum, 800 MHz trunked system <i>slide</i>
Chicago Transit	4	28	<a href="http://www.yourcta.com">www.yourcta.com</a>	Trunked system <i>slide</i>
Community Transit of Delaware County, PA	6	8, 30		Paratransit CAD, MDTs
County of Lackawanna Transit Systems (COLTS)	3	43	<a href="http://www.pavisnet.com/lackawanna">www.pavisnet.com/lackawanna</a>	ATIS In-vehicle next stop announcements AVL/GPS/GIS/CAD <i>slide</i>
Denver Regional Transportation District (RTD)	2	10	<a href="http://www.rtd-denver.com">www.rtd-denver.com</a>	AVL CAD, safety benefits
	5	11		TOS ILVU CAD <i>slide</i>
Georgia NAVIGATOR	3	25		ATIS Pre-trip phone, Internet, kiosk <i>slide</i>
Kansas City Area Transit Authority (KCATA)	2	12	<a href="http://www.kansascityguide.com">www.kansascityguide.com</a>	AVL, operations benefits

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## Appendix F: Transit Examples in Student Guide, Continued

### Examples used in materials (continued)

City	Mod	SG Page	Web site	Type of Example
King County Metro of Seattle	7	40	<a href="http://www.metrokc.gov/kcdot">www.metrokc.gov/kcdot</a>	Fare systems: regional Integration
London, Ontario's AVL system	2	13	<a href="http://www.gotransit.com">www.gotransit.com</a>	AVL, cost benefits
Mass Transit Administration of Maryland	2	12	<a href="http://www.mtmaryland.com">www.mtmaryland.com</a>	AVL test, operations benefits
MBTA Boston, MA	5	35	<a href="http://www.mbta.com">www.mbta.com</a>	TOS CAD, control center
Metro-Dade County Transit Agency, Miami	5	30	<a href="http://www.metro-dade.com/mdta">www.metro-dade.com/mdta</a>	TOS Transit control center <i>slide</i>
Metropolitan Atlanta Rapid Transit Authority (MARTA)	3	25, 48, 53-56	<a href="http://www.itsmarta.com">www.itsmarta.com</a>	ATIS TMC multimodal <i>slide</i>
Milwaukee County Transit System	2	12, used 4x		AVL CAD, operations and cost benefits
Minnesota Department of Transportation (MnDOT)	2	41	<a href="http://www.dot.state.mn.us/tmc/index.html">www.dot.state.mn.us/tmc/index.html</a>	AVL+MDT; Guidestar
MnDOT Travlink	9	42		Innovative procurements
Montgomery County, MD	2	41	<a href="http://www.dpwt.com">www.dpwt.com</a>	AVL GPS <i>slide</i>
Nantucket, MA	8	26	<a href="http://www.nantucketchamber.org">www.nantucketchamber.org</a>	EX: Rural Tourist ATIS internet
New Jersey Transit	7	37	<a href="http://www.njtransit.state.nj.us">www.njtransit.state.nj.us</a>	Fare systems Integrated payment, cost savings
	9	35		Cost estimating: APCs; <i>slide</i>
New York City	5	26	<a href="http://www.panynj.gov">www.panynj.gov</a>	TOS automatic train supervision <i>slide</i>
New York City Transit MTA	7	17	<a href="http://www.mta.nyc.ny.us">www.mta.nyc.ny.us</a>	Fare card: Magnetic stripe "Metrocard" subway <i>slide</i>
NYC Citibank	7	22	<a href="http://www.citibank.com">www.citibank.com</a>	Fare card: contact "VisaCash" failure <i>slide</i>
Pierce Transit	4	28	<a href="http://www.piercetransit.org">www.piercetransit.org</a>	900 MHz Trunked system, MDTs <i>slide</i>
Pierce Transit, SHUTTLE	6	24	<a href="http://www.piercetransit.org">www.piercetransit.org</a>	Paratransit demand response, ATIS <i>slide</i>

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## Appendix F: Transit Examples in Student Guide, Continued

### Examples used in materials (continued)

City	Mod	SG Page	Web site	Type of Example
Potomac and Rappahannock Transportation Commission, VA, SaFIRES	8	13, 20-22	<a href="http://www.omniride.com">www.omniride.com</a>	Small urban to metro
Pullman, Washington	3	18	<a href="http://www.pullmantransit.com">www.pullmantransit.com</a>	ATIS Internet <i>slide</i>
Rochester-Genesee Regional Transportation Authority	3	24		ATIS pre-trip phone
San Diego County	3	24	<a href="http://www.sandag.cog.ca.us/sdmts/c ts.htm">www.sandag.cog.ca.us/sdmts/c ts.htm</a>	ATIS pre-trip phone
Santa Clara County, CA, OUTREACH	6	23, 30	<a href="http://www.vta.org">www.vta.org</a>	Paratransit CAD, GIS AVL, ATIS <i>slide</i>
Southeastern Pennsylvania Transportation Authority (SEPTA)	9	41	<a href="http://www.septa.com">www.septa.com</a>	Innovative funds management
Suburban Mobility Authority for Regional Transportation, Detroit, (SMART)	9	26	<a href="http://www.ctaa.org/ct/novdec98/smart.shtml">www.ctaa.org/ct/novdec98/smart.shtml</a>	Funding: AVL for paratransit, evaluation team for proposal
Sweetwater County, WY	8	19	<a href="http://www.wvcc.cc.wy.us/community /rs.html">www.wvcc.cc.wy.us/community /rs.html</a>	Rural, large sparsely populated area
Torrance, CA	7	29	<a href="http://www.ci.torrance.ca.us">www.ci.torrance.ca.us</a>	Fare card: proximity Contactless <i>slide</i>
Ventura County, CA	3	19	<a href="http://www.GOVENTURA.org">www.GOVENTURA.org</a>	ATIS Internet <i>slide</i>
Ventura County, CA FARETRANS	7	37, 39	<a href="http://www.ventura.org/vcaging/aaa.htm">www.ventura.org/vcaging/aaa.htm</a>	Fare systems Integrated payment, cost savings, demo prox and contact stored value cards
Washington Metropolitan Area Transit Authority WMATA	7	28	<a href="http://www.wmata.com">www.wmata.com</a>	Fare card: Contactless "SmartTrip", rail, bus, parking lots <i>slide</i>
Winston Salem Transit Authority (WSTA) in North Carolina	6	22	<a href="http://www4.ncsu.edu/~mnsurask/wsta.html">www4.ncsu.edu/~mnsurask/wsta.html</a>	Paratransit CAD, AVL, MDTs

